

ences in the achenes of these forms are shown in FIGS. 1 to 5. The status of *S. Kurziana* should be equal to any of these other three forms, whether of specific or varietal rank.

DEPARTMENT OF BOTANY,
DUKE UNIVERSITY

REPORTS ON THE FLORA OF MASSACHUSETTS—III.

OWING to the extremely technical character of most of the species included in the present report, it has been necessary to disregard many records in local floras and rely for the most part on actual specimens or on recent monographic works, notably Prof. Fernald's "The Linear-leaved North American species of *Potamogeton*, Section *Axillares*." Incidentally the sequence of species in *Potamogeton* used here follows that given on page 29 of his monograph.

In cases where the persistence of a species in a given locality is open to doubt, the latest date of collection is noted. There are quite a number of these "fossil" records, particularly in the vicinity of Boston, and it will be interesting to see if any of them can be rediscovered after sixty or seventy years of oblivion.

One very complete massacre of the flora should be noted in the construction of the Quabbin Reservoir for the Metropolitan Water Supply. Because of its inundation of the Swift River Valley near the junction of Franklin, Hampshire and Worcester Counties, stations for all but complete aquatics must be considered obliterated in practically all of Enfield and Greenwich and large parts of Prescott, New Salem, Dana, Pelham and Belchertown.

TYPHACEAE (CAT-TAIL FAMILY)

TYPHA L. CAT-TAIL, FLAG.

T. latifolia L. Common Cat-tail. Marshes; common throughout.

Forma **ambigua** (Sonder) Holmb. in Hartmans Handb. Scand. Fl. ed. 12, i. 70 (1922); cf. also RHODORA, xxix. 249, 251 (1927). Rare over the same range as the species.

T. angustifolia L. Marshes; frequent along the coast, rare inland.

SPARGANIACEAE (BUR-REED FAMILY)

SPARGANIUM L. BUR-REED.

S. eurycarpum Engelm. Shallow water; frequent in the East, Brookfield in Worcester County and Sheffield and Stockbridge in Berkshire.

S. androcladum (Engelm.) Morong. (*S. lucidum* of Manual; cf. RHODORA, xxiv. 32 (1922)). Muddy shores; occasional in Essex, Middlesex, Barnstable, Dukes (but only Gosnold), Nantucket and Worcester Counties and the Connecticut Valley.

S. americanum Nutt. (Including var. *androcladum* of Manual; cf. RHODORA, xxiv. 33 (1922)). Bogs and muddy shores; common.

Var. **rigidum** Clausen in RHODORA, xxxix. 189 (1937). Framingham, Middlesex County, A. J. Eames.

S. chlorocarpum Rydb. (*S. diversifolium* of Manual; cf. RHODORA, xxiv. 33 (1922)). Muddy and peaty shores or swamps; occasional in the Boston District and westward but known only from Dighton and Somerset in the Southeast.

Var. **acaule** (Beeby) Fernald in RHODORA, xxiv. 33 (1922). Same range as the species but known only from Norton in the Southeast.

S. angustifolium Michx. (Including *S. simplex* of Manual; cf. RHODORA, xxiv. 33 (1922)). Deep or shallow water; old records from West Newbury, Stoneham and Canton in the Boston District, frequent in Berkshire County and not reliably reported elsewhere.

S. fluctuans (Morong) Robinson. Cold waters of lakes and ponds; Hopkinton and Canton in the southern Boston District, formerly occasional in the Swift River Valley in Worcester and Franklin Counties, and occasional in Berkshire.

S. minimum Fries. Cold shallow water; rare in southern Middlesex and in Berkshire County.

POTAMOGETONACEAE (PONDWEED FAMILY)

POTAMOGETON L. PONDWEED.

P. pectinatus L. Brackish or muddy shallow ponds; North Scituate in Plymouth County, occasional in western Barnstable, Dukes, Nantucket and southern Berkshire Counties.

P. Robbinsii Oakes. In quiet water; occasional in Essex, Middlesex, Suffolk, Plymouth, Bristol, western Barnstable, Worcester and southern Berkshire Counties and the Connecticut Valley.

P. CRISPUS L. Fresh or brackish waters; Cambridge and Arlington in Middlesex County.

P. confervoides Reichenb. Ponds and lakes in siliceous regions; rare stations in Middlesex, Bristol, Worcester and Berkshire Counties.

P. zosteriformis Fernald in Mem. Gray Herb. iii. 36 (1932). (*P. zosterifolius* of Manual). Ponds and quiet streams; rare stations in Essex, Middlesex and Berkshire Counties and in the Connecticut Valley.

P. foliosus Raf. var. **macellus** Fernald in Mem. Gray Herb. iii. 46 (1932). (*P. foliosus* of Manual). Quiet waters, either fresh or brackish; occasional near Boston, rare in Hampshire County and frequent in Berkshire.

P. Friesii Rupr. Fresh Pond, Cambridge, *C. E. Faxon*, July 22, 1880.

P. strictifolius Benn. Calcareous waters; Stockbridge and New Marlboro in Berkshire County. The record in the Flora of the Boston District (RHODORA, xi. 208 (1909)) not traced to any specimen so annotated but sheet of *P. Berchtoldi* var. *tenuissimus* in Gray Herbarium bears identical data.

P. pusillus L. (*P. pusillus* of Manual in part; *P. panormitanus* Biv. var. *major* and *minor*, cf. Fernald in Mem. Gray Herb. iii. 60 (1932) and in RHODORA, xlii. 246 (1940)). Basic or alkaline waters; rare stations in Middlesex, Dukes, Nantucket and Berkshire Counties.

P. gemmiparus Robbins. Slow streams and quiet water; occasional in Middlesex, Norfolk and Worcester Counties and rare in Hampshire and Hampden.

P. Hillii Morong. Slow streams; South Egremont, Berkshire County, *W. A. Archer*, no. 1626, on July 30, 1939.

P. obtusifolius Mert. & Koch. Cold waters, either quiet or moving; occasional in the Boston District and westward, unknown in the Southeast.

P. Berchtoldi Fieber. (*P. Sturrockii* of Manual, not Benn.; *P. pusillus* var. *mucronatus* (Fieber) Graebner; cf. Fernald in Mem. Gray Herb. iii. 80 (1932) for key to varieties and in RHODORA, xlii. 246 (1940) for their transfer). Fresh or brackish waters; occasional in Essex, Middlesex, Plymouth, Barnstable, Dukes, Worcester and Hampden Counties.

Var. **polyphyllus** (Morong) Fernald. Occasional in Middlesex, Dukes, Hampden and Berkshire Counties.

Var. **acuminatus** Fieber. (*P. pusillus* auctt., non L.). Occasional in the Boston District, rare in Barnstable, Nantucket, Worcester and Berkshire Counties.

Var. **tenuissimus** (Mert. & Koch) Fernald. (Including *P. pusillus* var. *capitatus* Benn.). Occasional in the eastern half of the state, Greenfield in Franklin County and Ware in Hampshire.

Var. **lacunatus** (Hagström) Fernald. Occasional in Middlesex, Suffolk, Norfolk, Plymouth and Hampden Counties.

P. Vaseyi Robbins. Quiet waters; occasional in Essex, Middlesex, Worcester, Franklin and Berkshire Counties.

P. lateralis Morong. Charles River, Needham and Dedham in Norfolk County, *C. E. Faxon*, in 1879 and 1880.

P. Spirillus Tuckerm. (*P. dimorphus* of Manual in part, not Raf.; cf. Fernald in Mem. Gray Herb. iii. 100 (1932)). Shallow quiet water, usually on clay bottom; frequent in the Boston District, occasional elsewhere on the mainland.

P. capillaceus Poir. (*P. hybridus* of Manual, including var. *multi-denticulatus* (Morong) Asch. & Graebn.; cf. Fernald in Mem. Gray Herb. iii. 109, 110 (1932)). Quiet shallow water; common in the eastern half of the State, occasional in Hampden County, rare elsewhere in the western half.

P. epihydrus Raf. (*P. epihydrus* var. *cayugensis* of Manual; cf. Fernald in Mem. Gray Herb. iii. 114 (1932)). Still or flowing water; Sheffield in Berkshire County, *C. H. Knowlton*, Sept. 5, 1915.

Var. **Nuttallii** (Cham. & Schdl.) Fernald in Mem. Gray Herb. iii. 115 (1932). (*P. epihydrus* of Manual). Common in the eastern part of the state and in Hampshire county, frequent in Hampden and rare in Worcester, Franklin, and Berkshire Counties.

P. tenuifolius Raf. (*P. alpinus* of Manual in part; cf. Fernald in RHODORA, xxxiii. 209 (1931)). Streams; Richmond in Berkshire County, *J. W. Robbins*, in 1864.

P. pulcher Tuckerm. Ponds and slow streams; occasional in the Boston District, rare in Plymouth, Bristol, Nantucket, Worcester, Hampshire and Hampden Counties, frequent in Gosnold in Dukes County.

P. amplifolius Tuckerm. Ponds and rivers; occasional in Essex, Middlesex, Norfolk, Plymouth, Worcester, Hampshire, Hampden and Berkshire Counties.

P. americanus Cham. & Schdl. Streams; occasional in the Boston District and in Berkshire County, rare in Franklin and Hampden.

P. natans L. Ponds and quiet streams; common in the Boston District and westward, rare in Plymouth and Bristol Counties, Eastham in Barnstable.

P. Oakesianus Robbins. Ponds and quiet streams; common in the Southeast, occasional in the Boston District and in southern Worcester and Berkshire County, rather frequent in the Connecticut Valley.

P. illinoensis Morong. (*P. lucens* of Manual, *P. angustifolius* auctt.; cf. Fernald in Mem. Gray Herb. iii. 29 (1932)). Ponds; rare records in the Boston District and probably persistent only

in Wenham in Essex County, Leverett in Franklin County, frequent in southern Berkshire County.

P. gramineus L. var. **graminifolius** Fries. (*P. heterophyllus* of Manual including forms, non Schreb.; cf. Fernald in RHODORA, xxiii. 189 (1921)). Ponds and streams; frequent in the Boston District and westward, but not known in the Southeast.

Var. **spathulaeformis** Robbins. (Cf. RHODORA, xxiii. 190 (1921)). Mystic Pond, Medford, Middlesex County, until 1881.

P. praelongus Wulf. Ponds and lakes in deep water; Haverhill, Hamilton and Wenham in Essex County, Cambridge in Middlesex, and rare in Franklin, Hampden and Berkshire Counties.

P. Richardsonii (Benn.) Rydb. Mill River, New Marlboro, Berkshire County, R. Hoffmann, July 24, 1912.

P. bupleuroides Fernald. Fresh to brackish shallow water; occasional throughout.

× **P. mysticus** Morong. Mystic Pond, Medford, Middlesex County, until 1881.

× **P. subnitens** Hagström in Kgl. Sv. Vet. Akad. Handl. lv. no. 5, 259 (1916). (*P. bupleuroides* × *gramineus*, *P. nitens* Am. auctt.). Wenham Pond, North Beverly, Essex County, until 1886.

RUPPIA L. DITCH GRASS.

(Cf. RHODORA, xvi. 119 (1914) for varieties).

R. maritima L. var. **longipes** Hagström. Brackish water; frequent all along the coast.

Var. **rostrata** Agardh. Frequent along the coast.

Var. **subcapitata** Fernald & Wiegand. Along the coast. Apparently less common than the two preceding varieties.

ZANNICHELLIA L. HORNED PONDWEED.

Z. palustris L. var. **major** (Boenningh.) Koch. (Cf. RHODORA, xxiii. 110 (1921)). Brackish water; rare along the coast.

ZOSTERA L. GRASS WRACK, EEL GRASS.

Z. marina L. var. **stenophylla** Aschers. & Graebn. (Cf. RHODORA, xxxv. 92 (1933)). Shallow seawater on muddy or sandy bottom; common all along the coast.

NAJADACEAE (NAIAD FAMILY)

NAJAS L. NAIAD.

(Cf. RHODORA, xxv. 105 (1923)).

N. flexilis (Willd.) Rostk. & Schmidt. (Including var. *robusta* Morong). Fresh or brackish water; common in the Boston District, occasional elsewhere.

N. guadalupensis (Spreng.) Morong. In barrier beach ponds; occasional in Dukes and Nantucket Counties, Falmouth in Barnstable County (cf. RHODORA, xxx. 136 (1928)).

N. gracillima (A. Br.) Magnus. Muddy, peaty or sandy ponds or pools; occasional in the Boston District, rare in Plymouth, Barnstable, Dukes, Worcester and Hampshire Counties, common in Franklin and Hampden Counties.

JUNCAGINACEAE (ARROW GRASS FAMILY)

SCHEUCHZERIA L.

S. palustris L. var. **americana** Fernald in RHODORA, xxv. 178 (1923). Bogs; rare in the Boston District and westward, not known in the Southeast.

TRIGLOCHIN L. ARROW GRASS.

T. maritima L. Saltmarshes; common along the coast.

ALISMACEAE (WATER-PLANTAIN FAMILY)

SAGITTARIA L. ARROW-HEAD.

S. latifolia Willd. Shallow water or wet places; common throughout. The following forms with the same habitat and range as the species proper:

Forma **obtusa** (Muhl.) Robinson.

Forma **hastata** (Pursh) Robinson.

Forma **gracilis** (Pursh) Robinson.

Forma **diversifolia** (Engelm.) Robinson.

S. Engelmanniana J. G. Sm. Muddy or sandy pond margins; rare in the Boston District, frequent in the Southeast, rare in southern and western Worcester County and central Hampden County, New Salem in Franklin County.

Forma **dilatata** Fernald in RHODORA, xxxviii. 74 (1936). Yarmouth in Barnstable County, *Fernald & Long*, no. 8466 (TYPE).

S. cuneata Sheldon. (*S. arifolia* Nutt.; cf. Fernald in RHODORA, xxiii. 192 (1921)). Shallow water; Holyoke in Hampden County, occasional in the Housatonic Valley in Berkshire County.

S. rigida Pursh. (*S. heterophylla* Pursh var. *rigida* Engelm.). Nantucket, *Nellie F. Flynn*, Aug. 20, 1899.

Forma **fluitans** (Engelm.) Fernald in RHODORA, xxxviii. 73 (1936). (*S. heterophylla* var. *angustifolia* Engelm., *S. heterophylla* forma *fluitans* (Engelm.) Blake). Shallow pond margins; occasional in southern Berkshire County.

Forma **elliptica** (Engelm.) Fernald in RHODORA, xxxviii. 74 (1936). (*S. heterophylla* var. *elliptica* Engelm.). Muddy banks of the Merrimac River, Lowell in Middlesex County and Lawrence and West Newbury in Essex, also very rare in Amherst in Hampshire County.

S. graminea Michx. Muddy shores; occasional in the Boston District and in Plymouth and Bristol Counties, Sandwich in Barnstable, occasional in Worcester County, Leverett and New Salem in Franklin, frequent in Hampshire, Ludlow and Holland in Hampden and occasional in Berkshire County.

S. teres Wats. In shallow water; Lincoln in Middlesex County, Plymouth and Lakeville in Plymouth, western Barnstable County, Warwick in Franklin and Springfield in Hampden.

S. subulata (L.) Buchenau. Muddy tidal riverbanks; Hanover and Wareham in Plymouth County.

Var. **gracillima** (Wats.) J. G. Sm. Wholly submerged in rivers; occasional in the Boston District, Pembroke in Plymouth County and Norton in Bristol.

LOPHOTOCARPUS Th. Durand

L. spongiosus (Engelm.) J. G. Sm. Tidal mud of estuaries; occasional in Essex and Middlesex Counties.

Forma **laminatus** Fernald in RHODORA, xxxviii. 73 (1936). Same range as the species.

ECHINODORUS Richard

E. tenellus (Martius) Buchenau. Muddy pond shores; Winchester, Cambridge and Watertown in Middlesex County. No collections later than 1903.

ALISMA L. WATER-PLANTAIN.

A. Plantago-aquatica L. (*A. brevipes* Greene). The large-flowered form with corolla 7–13 mm. wide and achenes 2.2–3 mm. long; cf. Wiegand and Eames, Fl. Cayuga Lake Basin, 53 (1926). Muddy shores; occasional in the Boston District.

Var. **parviflorum** (Pursh) Farwell in Rept. Comm. Parks and Boulev. Detroit, xi. 44 (1900). (*A. subcaudatum* Raf.). The small-flowered form with corolla 3–5.5 mm. wide and achenes 1.5–2 mm. long. Muddy shores; frequent in the Boston District and westward, occasional in Bristol and Nantucket Counties and western Barnstable County.

HYDROCHARITACEAE (FROG'S BIT FAMILY)

ANACHARIS Rich. WATER-WEED.

A. canadensis (Michx.) Planch. (*Elodea canadensis* of Manual in part; cf. Victorin in Contrib. Lab. Bot. Univ. Mon-

tréal, xviii. 40 (1931)). Calcicolous waters; rare stations in Essex, Middlesex and Berkshire Counties and in the Connecticut Valley.

Var. **Planchonii** (Casp.) Victorin in Contrib. Lab. Bot. Univ. Montréal, xviii. 40 (1931). East Andover in Essex County and Wakefield in Middlesex.

A. occidentalis (Pursh) Victorin in Contrib. Lab. Bot. Univ. Montréal, xviii. 40 (1931). (*Elodea canadensis* of Manual in part). Pond and river margins; occasional in the East on the mainland (except eastern Barnstable County) and sometimes becoming a nuisance, also Brookfield in Worcester County and occasional in Hampshire and Hampden Counties.

A. DENSA (Planch.) Victorin in Contrib. Lab. Bot. Univ. Montréal, xviii. 41 (1931). Established in Abington, Plymouth County (Knowlton in RHODORA, xlii. 524 (1940)).

VALLISNERIA L. TAPE GRASS. EEL GRASS.

V. americana Michx. (*V. spiralis* of Manual, not L.; cf. RHODORA, xx. 108 (1918)). Shallow fresh water; frequent.

A. S. GOODALE

F. W. GRIGG

A. H. GUSTAFSON

S. K. HARRIS

C. H. KNOWLTON

DAVID POTTER

S. N. F. SANFORD

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*Committee on the
Flora of Massachusetts.*

LILIUM SUPERBUM AND L. MICHIGANENSE

EDWIN D. HULL

In 1915 Farwell¹ described a new species of *Lilium*, which he called *L. michiganense*, including a typical form and two varieties, *L. m. umbelliferum* and *L. m. uniflorum*. Heretofore these plants had been considered as *L. superbum* L. Farwell's species appears to have been accepted by many botanists. Deam² considers it to be the usual form in Indiana, *L. superbum* being very rare in

¹ Notes on Michigan Liliaceae. Bull. Torr. Bot. Club 42: 351-358.

² Flora of Indiana: 313, 314. 1940.